

Draft SFM Wildland-Urban Interface Building Standard Regulations for CBC Chapter 7A

21 July 2005 Version

Document NOTES:

(Underlined Sections have already been adopted)

There are editorial errors, such as section numbering, in the existing CBC Chapter 7A text used in this document. For the official text of the existing CBC Chapter 7A as adopted by the BSC, May 18, 2005 see: “Emergency standards pertaining to Wildland-Urban Interface Fire Areas” at the BSC website under “Proposed Changes in Code Standards” http://www.bsc.ca.gov/prpsd_chngs/pc_emrrm.html

Bold text with right side boarder indicates areas of major text change from “30 June 2005 Version

[For SFM] Chapter 7A

**MATERIALS AND CONSTRUCTION METHODS FOR
EXTERIOR WILDFIRE EXPOSURE**

SECTION 701A SCOPE, PURPOSE AND APPLICATION

701A.1 - Scope. This chapter applies to building materials, systems and or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area as defined in Section 702A.

701A.2 - Purpose. The purpose of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.

701A.3. Application. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after December 1, 2005, shall comply with the following Sections:

1. 704A.1 – Roofing
2. 704A.2 - Attic Ventilation

701A.3.1 Alternates for materials, design, tests, and methods of construction. The enforcing agency is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Sections 104.2.7. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted in accordance with the California Fire Code, Articles 86A and 86B.

701A.3.2 Application Following Map Revisions. 180 days after the CDF Director has adopted revised Fire Hazard Severity Zone maps or a Wildland-Urban Interface Fire Area has been designated by a local agency, the following provisions shall become effective **statewide** for the following areas.

1. **State Responsibility Area Very High Fire Hazard Severity Zones – all provisions within this chapter**
2. **Local Agency Very High Fire Hazard Severity Zones – all provisions within this chapter**
3. **State Responsibility Area High Fire Hazard Severity Zones – all provisions within this chapter except exterior walls**

4. State Responsibility Area Moderate Fire Hazard Severity Zones – all provisions **within this chapter** except exterior walls and roof gutters.
5. Other Wildland-Urban Interface Fire Areas, designated by a local agency pursuant to H&S Code 13108.5 – all or any portion of **the provisions within this chapter as** specified by the local agency.

SECTION 702A - DEFINITIONS

For the purposes of this chapter, certain terms are defined below:

CDF DIRECTOR means the Director of the California Department of Forestry and Fire Protection.

FIRE PROTECTION PLAN is a document prepared for a specific project or development proposed for a Wildland-Urban Interface Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure.

The Fire Protection Plan shall be in accordance with this chapter and the California Fire Code, Article 86A. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted. Only locally adopted ordinances that have been filed with the California Building Standards Commission in accordance with Section 101.14 or the Department of Housing and Community Development in accordance with Section 101.15 shall apply.

FIRE HAZARD SEVERITY ZONES are geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. See California Fire Code Article 86.

LOCAL AGENCY VERY HIGH FIRE HAZARD SEVERITY ZONE means an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 5118 that is not a state responsibility area and where a local agency, city, county, city and county, or district is responsible for fire protection.

STATE RESPONSIBILITY AREA means lands that are classified by the Board of Forestry pursuant to Public Resources Code Section 4125 where the financial responsibility of preventing and suppressing forest fires is primarily the responsibility of the state.

WILDFIRE is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources as defined in Public Resources Code Sections 4103 and 4104.

WILDFIRE EXPOSURE is one or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. See Section 706A for the applicable referenced Sections of the Government Code and the Public Resources Code.

IGNITION-RESISTANT MATERIAL is any product which, when tested in accordance with UBC Standard 8-1 for a period of 30 minutes, shall have a flame spread of not over 25 and show no evidence of progressive combustion. In addition, the flame front shall not progress more than 10½ feet (3200 mm) beyond the centerline of the burner at any time during the test. Materials shall pass the accelerated weathering test and be identified as Exterior type, in accordance with UBC Standard 23-4. All materials shall bear identification showing the fire performance rating thereof. Such identification shall be issued by ICC-ES/ICBO-ES or a testing facility recognized by the State Fire Marshal having a service for inspection of materials at the factory. Fire-Retardant-Treated Wood as defined in CBC Section 207 or noncombustible materials as defined in CBC Section 215 shall satisfy the intent of the above definition. The enforcing agency may use other definitions of ignition-resistant material that reflect wildfire exposure to building materials and/or their materials performance in resisting ignition.

SECTION 703A – STANDARDS OF QUALITY

703A.1 General. Material, systems, and methods of construction used shall be in accordance with this Chapter.

703A.2 Qualification by Testing. Material and material assemblies tested in accordance with the requirements set forth in Section 703A.3 shall be accepted for use in accordance with the results and conditions of such tests. Testing shall be performed by a testing agency approved by the State Fire Marshal or identified by an ICC-ES/ICBO-ES report.

703A.3 Standards of Quality. The State Fire Marshal (SFM) standards listed below are also listed in Chapter 35, Part III and are part of this code.

- 12-7A-1 EXTERIOR WALL TEST STANDARD
- 12-7A-2 EXTERIOR WINDOW TEST STANDARD
- 12-7A-3 UNDER EAVE TEST STANDARD
- 12-7A-5 DECK TEST STANDARD

SECTION - 704A - MATERIALS, SYSTEMS AND METHODS OF CONSTRUCTION

SECTION 704A -- ROOFS

704A.1 ROOFING

704A.1.1 General. Roofs shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

704A.1.2 Roof Coverings. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire-stopped with approved materials or have one layer of No. 72 ASTM cap sheet installed over the combustible decking.

704A.1.3 Roof Valleys. When provided, valley flashings shall be not less than 0.016-inch (0.41 mm) (No. 28 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36 inches (914 mm) wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.

704A.1.5 Roof Gutters. Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.

704A.2 Attic Ventilation.

704A.2.1 General. When required by Chapter 15, roof and attic vents shall resist the intrusion of flame and embers into the attic area of the structure, or shall be protected by corrosion resistant, non-combustible wire mesh with ¼ inch (6 mm) openings or its equivalent.

704A.2.2 Eave or Cornice Vents. [Vents shall not be installed in eaves and cornices.](#)

[Exception:](#) Eave and cornice vents may be used provided they resist the

intrusion of flame and burning embers into the attic area of the structure.

704A.3 Eave Protection. Eaves and soffits shall meet the requirements of 12-7A-3 “Under Eave Test Standard” or shall be protected by ignition-resistant materials or noncombustible construction on the exposed underside.

SECTION 705A – EXTERIOR WALLS

705A.1 General. Exterior walls shall be approved non-combustible or ignition-resistant material, heavy timber, or log wall construction or shall provide protection from the intrusion of flames and embers ~~and temperatures capable of igniting combustibles on the inside of the wall~~ in accordance with 12-7A-1 “Exterior Wall Test Standard”.

Exterior wall coverings shall extend from the top of the foundation to the ~~underside of the roof sheathing, and~~ terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

705A.2 Exterior Wall Openings. Exterior wall openings shall be in accordance with this section.

705A.2.1 Exterior Glazing. Exterior windows, window walls, glazed doors, and glazed openings within exterior doors shall be insulating-glass units with a minimum of one tempered pane, or glass block units, or have a fire resistance rating of not less than 20 minutes, when tested according to ASTM E 2010, or conform to the performance requirements of 12-7A-2 “Exterior Window Test Standard”.

705A.2.2 Doors. Exterior door assemblies shall conform to the performance requirements of 12-7A-1 “Exterior Wall Test Standard,” or shall be of approved non-combustible construction, or solid core wood having stiles and rails not less than 1-3/8 inches thick with interior field panel thickness no less than 1 1/4" thick, or shall have a fire resistance rating of not less than 20 minutes when tested according to ASTM E 2074.

Exception: Noncombustible or exterior F.R. treated wood vehicle access doors.

705A.2.3 Under-Floor Ventilation. Under-floor ventilation shall resist the intrusion of flame and embers into the area under the floor, or shall be protected by corrosion resistant, non-combustible wire mesh with ¼ inch (6 mm) openings or its equivalent.

705A.2.4 Other Wall Vents. Unless otherwise prohibited by other provisions of this code, vent openings in exterior walls shall resist the intrusion of flame and embers into the structure or vents shall be screened with a corrosion-resistant, non-combustible wire mesh with ¼ inch (6 mm) openings.

705A.3 Appendages and Floor Projections. The underside of cantilevered and overhanging appendages and floor projections shall maintain the ignition-resistant integrity of exterior walls, or the projection shall be enclosed to the grade.

705A.4 Unenclosed Underfloor Protection. Buildings shall have all underfloor areas enclosed to the grade with exterior walls in accordance with Section 705A.1.

Exception: The complete enclosure of under floor areas may be omitted where the underside of all exposed floors, exposed structural columns, beams and supporting walls are protected as required with exterior ignition-resistant material construction or be heavy timber.

706A. - ANCILLARY BUILDINGS AND STRUCTURES

706A.1 Decking. Surfaces, stair treads, risers, and landings of decks, porches, & balconies within **10 feet of the primary structure** shall be "Ignition Resistant Materials" and pass the performance requirements of 12-7A-5 "Deck Test Standard (Parts "A" and "B").

OR

Surfaces, stair treads, risers, and landings of decks, porches, & balconies shall be constructed with heavy timber, exterior fire retardant treated wood or non-combustible materials.

OR

Surfaces, stair treads, risers, and landings of decks, porches, & balconies shall pass the performance requirements of 12-7A-5 (Part "A" only) "Deck Test Standard" ~~HRR section when with a net peak heat release rate of 25kW/sq-ft for a 40 minute observation period in accordance with 12-7A-5 Part A (e) 1 only.~~

1. The property is certified as meeting the requirements of defensible space, and
2. The exterior wall and openings to which it is attached ~~is designed to withstand the heat release from the selected decking material and~~ is of approved non-combustible or ignition resistant material.

Exception: This option is not available when the deck is extended over an exposed slope, or threatened by downhill flame lengths greater than those that legally enforced defensible space can mitigate.

~~(Peak Heat Release Rate component of less than 100 KW becomes the pass/fail point [need to decide for how long testing duration such as average heat release rate or total HRR using ICal calorimeter) (weathering at 12 weeks) (need to consider finish rating??) (Intumescent paint not to be permitted)~~

706A.2 Ancillary Structures. When required by the Authority Having Jurisdiction ancillary and detached accessory structures shall comply with the provisions of this Chapter.

Figure 701A.3. Map of California State Responsibility Area (SRA) for wildfire protection responsibility and Fire Hazard Severity Zoning.

The SRA map Figure 701A.3
was deleted from this document to reduce file size
for efficient e-mail communication. This page with the map
is available at <http://osfm.fire.ca.gov/UWIBS.html>
or by e-mail to ethan.foote@fire.ca.gov

These areas encompass a combination of all (Moderate, High, & Very-High) Fire Hazard Severity Zones within SRA. For further information on SRA or Fire Hazard Severity Zone mapping go to the California Department of Forestry and Fire Protection (CDF) Fire and Resource Assessment Program (FRAP) webpage at <http://frap.cdf.ca.gov>. Click on “Maps” or “Data,” FRAP may be contacted at (916)327-3939 or at CDF, Attn: FRAP; PO Box 944246; Sacramento CA 94244-2460. Local mapping assistance is available from California Fire Plan staff at a CDF Unit or local government county fire department (see http://www.fire.ca.gov/FireEmergencyResponse/FirePlan/units_countyfireplan.asp and click on “CDF Unit “ to locate the Pre-Fire Engineer in the CDF Unit near you. In addition, street level mapping data may be viewed on the world wide web at <http://wildfire.cr.usgs.gov/fireplanning/>. Read “User Instructions” in “Help.” Run the “Fire Planning and Mapping Tools Viewer.” Select the “State Responsibility Areas” layer under “Boundaries” and “zoom in” to a community. This Fire Planning and Mapping Tools site is a pilot test project with limited availability.